

## Remarks

### Objection to Specification

The specification is objected to because of a reference numeral error appearing in paragraph [0023] of page 6. The above amendment to the specification makes the Examiner's suggested correction of "spark plug 3" to "spark plug 6" consistent with the drawings.

### Objection to Claims

Claims 1–10 are objected to on the basis of an informality identified in claims 1–3, 4, and 9. In particular, the Examiner would prefer that applicant refer to the recited "first check valve" located between the air chamber and the plenum chamber as the "plenum check valve" and refer to the recited "second check valve" between the plenum chamber and the combustion chamber as the "combustion chamber check valve" as so termed in the Detailed Description section of the specification.

The use of the terms "first" and "second" to distinguish between different components of the same type is a common practice in claim drafting. The terms also have antecedence in the specification, for example, in paragraph [0008] on page 3, where the "first check valve" is said to be "located between the air chamber and the plenum chamber" and the "second check valve" is said to be "located between the plenum chamber and the combustion chamber." The terms "plenum" and "combustion chamber" are merely suggestive of the locations of the first and second check valves, which locations are already specified for the "first" and "second" check valves in the claims using clearer descriptions. Moreover, "plenum" and "combustion

“chamber” are not recognizable terms of art for check valves or even further descriptions of the check valves themselves.

While the Examiner’s suggestion is welcome and may even be a good idea, applicant is reluctant to make changes to the claims that are not warranted by the statutes.

### **Double Patenting Rejection**

Claim 11 stands rejected for obviousness-type double patenting over applicant’s earlier issued US Patent No. 6,491,002.

A Terminal Disclaimer in compliance with 37 CFR 1.321(c) is attached to overcome this rejection.

### **Novelty Rejection**

Claim 11 stands rejected as being anticipated by applicant’s much earlier US Patent No. 4,759,318.

The differential piston 30 of Applicant’s earlier patent includes a seal 37 that blocks the flow of compressed air from the plenum 16 into the detonation chamber 20 during the differential piston’s return stroke until the differential piston 30 reaches its uppermost position (i.e., the end of the return stroke). There, the seal 37 disengages from a cylinder wall 37 and enters into a port 47, opening a passageway around the differential piston 30 for admitting air into the detonation chamber 20. A clear description of this arrangement is found in column 2, lines 49 –58 of the earlier Adams patent. Please note that it is only at the “uppermost” position of the

differential piston's return stroke that compressed air from the plenum 16 enters the detonation chamber 20.

In contrast, the last lines of claim 11 specify that the compressed air from the plenum chamber enters the combustion chamber near the start of the power piston's return stroke. This is entirely different from what is possible with the motor disclosed in Applicant's earlier patent. There is no easy way to change the flow-control structures of Applicant's earlier motor design to admit air from the plenum into the detonation chamber near the start of the return stroke. The earlier-disclosed flow-control structures including the seal 37 are necessary to permit the plenum 16 to be filled during the power stroke and to provide for lifting the differential piston 30 during the return stroke.

#### **Allowable Subject Matter**

Claims 12-14 are deemed to contain patentable subject matter but are objected to as being dependent upon a rejected base claim. However, as explained above independent claim 11 (the rejected base claim) is clearly and fundamentally different from the applied reference to applicant's earlier work. Accordingly, claims 12-14 are believed patentable for this reason as well as for their own reasons. The Examiner is thanked for the careful consideration given to each of the claims.

\* \* \*

In view of the above, all of the pending claims 1-14 are believed in condition for allowance. Reconsideration of the rejected claims and allowance of all pending claims 1-14 are respectfully requested. For any questions on this response or the

application, the Examiner is invited to contact applicants' representative at the telephone number given below.

Respectfully submitted,



---

Thomas B. Ryan, Registration No. 31,659  
HARTER, SECREST & EMERY LLP  
1600 Bausch & Lomb Place  
Rochester, New York 14604  
Telephone: 585-231-1101  
Fax: 585-232-2152

February 11, 2005